

IN THE CLAIMS

Please amend the claims as follows:

1 – 16. (Cancelled)

17. (Currently Amended): A semiconductor element, comprising:

a first base layer of a first conductivity type;

a second base layer of a second conductivity type formed selectively in one surface region of said first base layer;

an emitter layer or a source layer of the first conductivity type formed selectively in a surface region of said second base layer;

a gate electrode formed on ~~that portion of~~ said second base layer which is positioned between said emitter layer or source layer and said first base layer with a gate insulating film interposed between said gate electrode and said second base layer;

a collector layer or a drain layer formed on the other surface region of said first base layer or formed selectively on one surface region of the first base layer;

a first main electrode formed on said collector layer or on said drain layer;

a second main electrode formed on said emitter layer or source layer and on said second base layer; and

a channel region formed in contact with said gate insulating film to permit the carrier to migrate between said emitter layer or source layer and said first base layer, said channel region having an impurity concentration profile along the gate insulating film which is constant substantially between said emitter layer or source layer and said first base layer.

18. (Original): The semiconductor element according to claim 17, wherein said gate electrode is buried in a trench with a gate insulating film interposed between said gate electrode and said trench, said trench being formed to extend from the surface of said emitter

layer or source layer to reach an intermediate portion of said first base layer through said second base layer.

19. (Original): The semiconductor element according to claim 17, wherein said gate electrode is formed on said gate insulating film formed on the surface of said second base layer.

20 – 32. (Cancelled)

33. (New): The semiconductor element according to claim 17, wherein the impurity concentration of the channel region is higher than that of the second base layer.

34. (New): A semiconductor element comprising;

- a first base layer of a first conductivity type;
- a second base layer of a second conductivity type formed selectively in one surface region of said first base layer;
- an emitter layer or a source layer of the first conductivity type formed selectively in a surface region of said second base layer;
- a gate electrode formed on said second base layer positioned between said emitter layer or source layer and said first base layer with a gate insulating film interposed between said gate electrode and said second base layer;
- a collector layer or a drain layer formed on the other surface region of said first base layer or formed selectively on one surface region of the first base layer;
- a first main electrode formed on said collector layer or on said drain layer;
- a second main electrode formed on said emitter layer or source layer and on said second base layer; and
- a channel region formed in contact with said gate insulating film to permit the carrier to migrate between said emitter layer or source layer and said first base layer, said channel

region having an impurity concentration profile which is substantially constant in every region along the gate insulating film.

35. (New): The semiconductor element according to claim 34, wherein said gate electrode is buried in a trench with a gate insulating film interposed between said gate electrode and said trench, said trench being formed to extend from the surface of said emitter layer or source layer to reach an intermediate portion of said first base layer through said second base layer.

36. (New): The semiconductor element according to claim 34, wherein said gate electrode is formed on said gate insulating film formed on the surface of said second base layer.

37. (New): The semiconductor element according to claim 17, wherein the impurity concentration of the channel region is higher than that of the second base layer.

38. (New): A semiconductor element comprising:

- a first base layer of a first conductivity type;
- a second base layer of a second conductivity type formed selectively in one surface region of said first base layer;
- an emitter layer or a source layer of the first conductivity type formed selectively in a surface region of said second base layer;
- a gate electrode formed on said second base layer positioned between said emitter layer or source layer and said first base layer with a gate insulating film interposed between said gate electrode and said second base layer;
- a collector layer or a drain layer formed on the other surface region of said first base layer or formed selectively on one surface region of the first base layer;
- a first main electrode formed on said collector layer or on said drain layer;

a second main electrode formed on said emitter layer or source layer and on said second base layer; and

a channel region formed in contact with said gate insulating film to permit the carrier to migrate between said emitter layer or source layer and said first base layer, said channel region having an impurity concentration along the gate insulating film which is constant substantially between a region adjacent to said second base layer and a region adjacent to said emitter layer or source layer.

39. (New): The semiconductor element according to claim 38, wherein said gate electrode is buried in a trench with a gate insulating film interposed between said gate electrode and said trench, said trench being formed to extend from the surface of said emitter layer or source layer to reach an intermediate portion of said first base layer through said second base layer.

40. (New): The semiconductor element according to claim 38, wherein said gate electrode is formed on said gate insulating film formed on the surface of said second base layer.

41. (New): The semiconductor element according to claim 38, wherein the impurity concentration of the channel region is higher than that of the second base layer.